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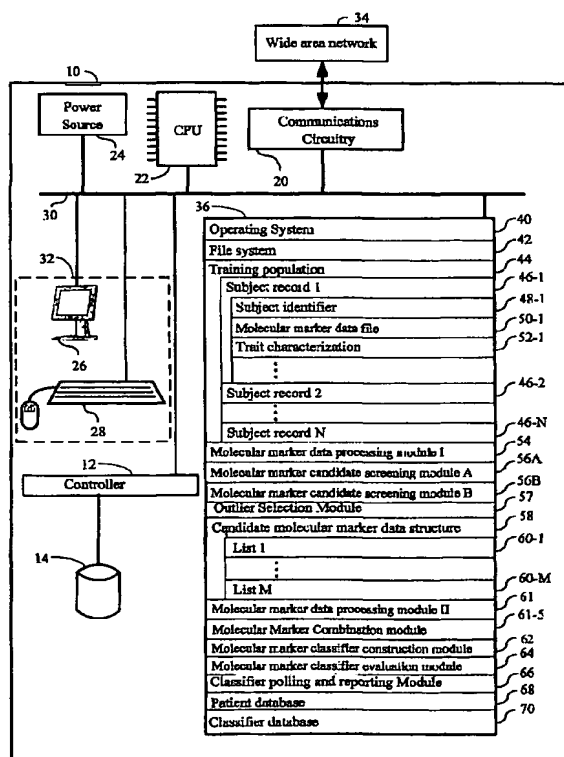
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(54) **Title:** COMPUTER SYSTEMS AND METHODS FOR CONSTRUCTING BIOLOGICAL CLASSIFIERS AND USES THEREOF

(57) **Abstract:** The present invention provides systems and method for constructing classifiers that distinguish between trait subgroups using molecular marker data from blood samples. The invention further encompasses the use of the classifiers and combinations of molecular markers identified by the classifiers in a wide variety of applications including: diagnosis; prognosis; prediction of disease, stage of disease or disease risk; monitoring disease progression and/or regression; monitoring disease reoccurrence and identifying risk of disease reoccurrence; determining and/or predicting response to treatment and/or treatment outcomes; monitoring and/or predicting treatment compliance or non compliance and the like. The invention further provides a variety of selected molecular markers and a means to identify combinations of the selected molecular markers useful for diagnosing particular traits of interest.

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